

2004 Annual Report on Investments

**Submitted to:
Council on Postsecondary Education**



**Submitted by:
Kentucky Science & Technology Corporation**



Commercialization Investment Fund
(CIF):
R&D Voucher Fund
Rural Innovation Fund
Commercialization Fund
ICC Concept Pool

Kentucky Science and Engineering Foundation
(KSEF)

Kentucky Experimental Program to Stimulate Competitive Research
(KY EPSCoR)

September 15, 2004

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II	Commercialization Investment Funds (CIF)
III	Kentucky Science and Engineering Foundation (KSEF)
IV	Kentucky Experimental Program to Stimulate Competitive Research (KY EPSCoR)

List of Attachments:

1. KSTC Board of Directors
2. Meeting Minutes and Notes
 - a. Summary of KSTC Board Actions/Minutes
 - b. CIF Commercialization Review Panel Meeting Notes
 - c. KSEF Advisory Board Meeting Notes
 - d. Statewide EPSCoR Committee Meeting Minutes
3. Press Releases
4. News Clips
5. Investment Portfolio by Fund
6. Investment Portfolio by University
7. Sample KSEF Requests for Proposals
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I. EXECUTIVE SUMMARY

Highlights

July 1, 2000 - June 30, 2004

557 Investments
\$22.2M State Funds Invested
\$60.3M Non-State Matching

(Also see the program chapters for additional funds leveraged by awardees as a result of the investment of State funds.)

A. BACKGROUND

Kentucky Science and Technology Corporation (KSTC) is an independent nonprofit enterprise and was incorporated in 1987. Its longstanding mission is “to enhance the capacity of people companies and organizations to develop and apply science and technology and compete responsibly in the global marketplace.” The Board of Directors is self-appointing with representatives from the private sector, education including the public and private universities, and other organizations relevant to the KSTC mission (see attached list).

Kentucky's Science and Technology Strategy (1999) was produced by KSTC in coordination with public and private sectors partners and remains a testament to our commitment to advancing innovation in general and the resultant Kentucky Innovation Act (KIA) specifically. As such, KSTC has entered into annual contracts since 2001 with the Commonwealth of Kentucky through the Council on Postsecondary Education (CPE) to create, manage and develop various KIA programs. These include:

- Commercialization Investment Funds (CIF):
 - R&D Voucher Fund
 - ICC Concept Pool
 - Rural Innovation Fund
 - Kentucky Commercialization Fund
- Kentucky Science and Engineering Foundation (KSEF)
- Kentucky Experimental Program to Stimulate Competitive Research (EPSCoR).

INVESTMENT APPROACH

The implementation of these KIA programs represents a new approach to investing Kentucky funds in Kentucky's future. The new programs (CIF and KSEF) have been designed by KSTC as investments with contractual expectations for returns on investment (ROI) upon financial triggers when a new technology begins to generate substantial revenues. The ROI payback arrangements, primarily for CIF investments, are the first of their kind in Kentucky, whereby any negotiated financial returns are to be reinvested in KIA programs. This type of negotiation has been completed with 19 companies.

PROGRAM ANALYSES

The data analyses of CIF and KSEF programmatic activities include all investments since 2002, the first year such awards were made by KSTC after the start-up period to create the programs. Please be advised that discrepancies can occur because of the dynamic nature of these programs, which involve contract negotiation that do not automatically result in a signed agreement, or others may be canceled if a faculty leaves the state. Therefore, number of awards, as approved by KSTC, may not equal number of active projects reported by the individual programs. Moreover, CIF companies eligible for multiyear awards originally were approved only on an annual basis and counted each time a new-year award was made. During FY04, the protocol was streamlined for efficiencies whereby such approvals may include multi-year amounts but the annual contractual amounts paid are negotiated based on applicant performance, ongoing technical reviews and due diligence.

Also note that a transition remains underway in data reporting by the EPSCoR program. Starting with FY03 data, EPSCoR has began the transition to reporting formats that are conducive to analysis by KIA research focus area. This is relevant in that the total lump sum program investments from the FY01 and FY02 are listed to help provide a more comprehensive picture of EPSCoR program activities since the passage of the Kentucky Innovation Act.

The EPSCoR is funded by six different federal agencies, which operate on fiscal years different from the State and, in many cases, each other. Reasonable caution is advised in making direct comparisons of federal funds with State funds that operate exclusively on the State fiscal year.

FINANCIAL REPORTING

Fund balances and related financial information contained in this summary also are presented for both program and administrative activities. This covers all relevant years to date for which KSTC has entered into contracts with CPE for creating and administering these programs, i.e., FY01, FY02, FY03 and FY04.

The financial data address: State appropriations and disbursements; KSTC receipts, expenditures and fund balances; and FY04 actual distribution of staff salaries across these KIA funds, which is based on monthly allocations of time and reported monthly to CPE.

B. PRIORITY FOCUS AREAS

Consistent with the priority focus areas established by the State, KSTC has invested funds under the Commercialization Investment Funds (CIF) and the Kentucky Science and Engineering Foundation (KSEF) exclusively in the areas of Biosciences, Environmental and Energy Technologies, Human Health and Development, Information Technologies and Communications, and Materials Science and Advanced Manufacturing. The Kentucky Experimental Program to Stimulate Competitive Research (EPSCoR) has made these a priority where feasible in complying with guidelines with the federal agencies that sponsor EPSCoR funding and with other priorities set by the Statewide EPSCoR Committee.

A searchable database of all awards is available on-line at www.kstc.com for viewing activity in each of these focus areas, by university, by region and by funding program.

C. THE FUNDS

COMMERCIALIZATION INVESTMENT FUNDS (CIF)

The Commercialization Investment Funds (CIF) are a series of pre-seed and seed stage capital funds aimed at promoting and developing early stage technology companies in the Commonwealth of Kentucky. There are four funds within CIF: Kentucky Commercialization Fund, Rural Innovation Fund, R&D Voucher Fund, ICC Concept Pool Fund.

The basic eligibility requirements, available funds for each, investment amounts, application frequency and whether or not the investment is subject to payback are provided in Table 1.1.

TABLE 1.1 CIF Program Descriptions

CIF Fund:	Kentucky Commercialization	Rural Innovation	R&D Voucher	ICC Concept Pool
Eligibility:	Proposal must come from university faculty (pre-company) to commercialize a technology/product/process. Work must be done at faculty member's organization.	Rural Kentucky based companies with less than 150 employees. Must use funds to contract with a third party consultant.	Kentucky-based companies with less than 150 employees Must contract with an accredited postsecondary institution.	These funds are a carve-out of the R&D Voucher Fund. ICC companies in good standing, working the ICC Process.
Target:	Faculty members	Inventors or entrepreneurs	Existing Companies or Entrepreneurs	Existing Companies or Entrepreneurs
Annual State Funding	\$750,000	\$1,000,000	\$2,800,000	\$200,000
Investment Amount(s)	\$75,000/year for up to 3 years	\$50,000/year for up to 2 years	\$100,000/year for up to 2 years	\$25,000 1x award
Matching Requirement	None	None	1:1	1:1
Application Frequency	1x/year	3x/year	3x/year	open
Payback Required?	yes	For any cumulative award amount > \$25,000	yes	no

KENTUCKY SCIENCE AND ENGINEERING FOUNDATION (KSEF)

Under the Kentucky Innovation Act, the General Assembly directed the Kentucky Science and Technology Corporation (KSTC) to create and manage the Kentucky Science and Engineering Foundation as a means to increase Kentucky's capacity to become a leader state in competitive research by making its own investments in peer-reviewed science and engineering research and by attracting more research funding from all sources to the Commonwealth. This mission is carried out under four programs as follows.

R&D Excellence - purpose is to achieve excellence in science and engineering and allow innovation and technology development in existing and emerging areas of research by making proactive investments through an annual peer-reviewed competitive selection process.

TABLE 1.2 KSEF: R&D Excellence Grant Categories

R&D Excellence Grant category	Average Grant Size and Length	Eligibility	Approximate Annual Budget for State Funding	Matching Requirement (cash/in-kind)
Exploratory Adv. Research	\$50,000/Year for up to 2 Years	University Faculty	\$800,000	1 to 1
Purpose-Driven Research	\$30,000/Year for up to 2 Years	University Faculty	\$600,000	1 to 1
Emerging Technologies	\$40,000/Year for up to 2 Years	University Faculty & Sm. Businesses	\$400,000	1 to 1
Emerging Ideas	\$15,000 for up to 1 Year	University Faculty	\$200,000	None

Technology Capacity Building – purpose is to build and enhance capacity in developing intellectual property and technology portfolio and understanding of the technology transfer process and federal programs for small businesses.

Human Resource Development – purpose is to build and retain excellent human capital by providing appropriate science and engineering training to students through creative programs and by enhancing the knowledge and skill set of the providers through on-site short courses.

Information Resources Center – purpose is to become a one-step information resource center by gathering and disseminating the information on science and engineering in Kentucky.

EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH (KY EPSCOR)

The Kentucky Statewide EPSCoR (KY EPSCoR) Program's mission is to enhance the research and intellectual capacity of universities and colleges by building and coordinating strategic investments in human capital and physical infrastructures necessary for Kentucky to excel in federal R&D funding competitiveness. The Statewide Program is divided into two programmatic areas: the *Federal Agency EPSCoR Program* which requires state matching funds, and the *KY EPSCoR Infrastructure Seeding Program* which requires institutional matching funds and a commitment to submit a proposal for federal R&D funding. Federal agencies operating EPSCoR programs include: National Science Foundation (NSF), NASA, Department of Energy (DOE), Department of Defense (DOD), Environmental Protection Agency (EPA), National Institutes of Health (NIH).

TABLE 1.3 EPSCoR Program

Federal Agency Program	Federal Grant Fiscal Year	Period of Performance	Federal Requirement for Matching Funds	Sample Annual Budget for State Funds
NSF	3/1-2/28	3/02-2/05	2 to 1	\$1,325,156
NASA	8/1-7/31	8/01-7/06	1 to 1	\$200,000
DOE	7/1-6/30	7/03-6/06	1 to 1	\$600,000
EPA	10/1-9/30	10/01-9/04	1 to 1	\$5,000
NIH	varies	varies	none	\$0
USDA	varies	varies	none	\$0
DOD	varies	varies	2 to 1	\$0
Infrastructure Support (State)	7/1-6/30	varies	varies	\$ 2,275,159

D. THE INVESTMENT OVERVIEW BY FUND

The following table presents an overview of KSTC's KIA investments for the period of FY01-FY04. Included are analyses of numbers of awards and State and Non-State matching funds.

TABLE 1.4 KSTC OVERVIEW OF INVESTMENTS BY KIA FUND FY 01- FY04
(on the following page)

E. PUBLIC AWARENESS

Announcements were released to the media after each major funding round formally approved by KSTC. The series of press releases is included in the appendices.

The second annual Innovation and Enterprise Conference was held in March 2004 featuring researchers and entrepreneurs in which KIA funds have been invested. Posters and table top demonstrations were available for awardees from CIF, KSEF and EPSCoR. In addition, a series of sessions were arranged for select companies to pitch their technologies to a panel of venture capitalists from around the region. Approximately 300 people attended the 2004 conference. The third annual conference has been scheduled for March 30, 2005.

A "Portfolio of KIA Investments" has been prepared and routinely updated as new investments have been approved by the KSTC Board of Directors and contact negotiations completed with the applicant. Attached is the portfolio of projects approved through June 30, 2004. A searchable version is available on-line at www.kstc.com.

Brochures on various funds have been prepared and are disseminated at every opportunity. Websites for each program are a main source of up to date information on request for proposals, funding guidelines and award announcements. CIF is www.startupkentucky.com; KSEF is <http://ksef.kstc.com>; EPSCoR is www.kyepscor.org. In addition, the KSTC website links all these sites in one address at www.kstc.com. Brochures for each program have been developed. Samples have been provided in the prior year report.

F. TECHNICAL NOTES

This Executive Summary analyzes all active investments, while the subsequent chapters on each fund focus on approved projects. Discrepancies may exist between the overall data analyses in this Summary and subsequent chapters (i.e., CIF and KSEF). This is a function of the dynamic nature of these programs. Some projects that were formally "approved" by KSTC either were not able to lead to a contract or the awardee left the state before completing the project. While KSTC approves maximum award amounts, the ensuing contract negotiations may reduce this amount. In other cases, the move to multi-year CIF awards with annual re-negotiations further compounds the challenges of reconciling numbers. The FY04 CIF numbers are wholly consistent with the formal itemized requests to CPE for fund transfers following each formal action taken by KSTC to approve new awards or renewals for existing projects to receive additional funds.

G. INTERNAL PROTOCOLS

Confidentiality – KSTC institutes various protocols to maintain the confidentiality of materials submitted by applicants to the CIF and KSEF programs. This includes applications forms that request the applicant to clearly indicate if there are proprietary or other confidential information contained in the proposal. External reviewers for both these programs first sign non-disclosure statements prior to serving as a reviewer. Finally, the original application documents are maintained in locked file cabinets with only 2 people who have access to the keys. On-line firewalls and security codes are continuously in place.

Common Database Fields – Database development is an on-going activity to facilitate various analyses and data reporting and maintain an in-depth system of accountability to respond to the data needs of various parties. Managing the complexities of the data within each program remains a company-wide priority.

H. FINANCIAL HIGHLIGHTS

The tables on the following pages include financial highlights for the period FY01-FY04, except as noted:

- Summary of State appropriations and disbursements (Table 1.5),
- Summary of KSTC receipts, expenditures and fund balances (Table 1.6), and
- Actual FY04 distribution of staff salaries to these KIA programs (Table 1.7).

As always, other backup details for these financial figures are available on request.

EPSCoR Program Funds from CPE to Universities

The Summary of Receipts, Expenditures and Fund Balances does not reflect matching funds transferred directly from CPE to various Kentucky postsecondary institutions to leverage federal EPSCoR and EPSCoR-type grants. These transfers are coordinated by KSTC pursuant to a Personal Service Contract with CPE and corresponding Memoranda of Understanding with KSTC.

KSTC, in conjunction with the EPSCoR staff and institutions, has begun an EPSCoR fiscal reporting structure to analyze budgeted versus actual federal and state matching receipts, expenditures, and fund balances for each fiscal year by funding source, institution, and project. The complexity of federal funding streams suggests that this will be an evolving process.